

VCU 02-14

Amendment dated 10/21/2011

10/565,852

Reply to office action mailed 06/21/2011

The following is a complete listing of all claims in the application, with an indication of the status of each:

### **Listing of claims:**

1. (currently amended) An apparatus for measuring intra cranial pressure,  
2 comprising:
  - 3 an acoustic eye patch conformably adapted to an eyeball of a patient,  
4 said eye patch having sensors for measuring acoustic signals in the brain,  
5 without the sensors coming into contact with the skull;
  - 6 a sweep generator for applying acoustic signals to the brain across the  
7 skull of the patient, said signals sweeping a predetermined range, a resonant  
8 frequency of said eyeball of the patient being within said predetermined  
9 range, said predetermined range covering a corresponding range of resonant  
10 frequencies across a range of patients; and
  - 11 an analyzer for determining an intra cranial pressure from a degree of  
12 damping of ~~an~~ said swept acoustic signal at ~~a~~ the resonant frequency of said  
13 eyeball of the patient, said intra cranial pressure being transmitted directly to  
14 said eyeball where said pressure and said damping are measured without  
15 interference from attenuation by the skull of the patient, said resonant  
16 frequency and degree of damping being determined from an output of the  
17 acoustic eye patch, wherein said degree of damping is correlated to a measure  
18 of said intra cranial pressure.
1. (previously presented) The apparatus of claim 1, wherein said  
2 predetermined range is an ultrasonic resonance range.

VCU 02-14

10/565,852

02940323aa

Amendment dated 10/21/2011

Reply to office action mailed 06/21/2011

1       3. (previously presented) The apparatus of claim 1, wherein the acoustic eye  
2       patch is adapted to be applied to both eyeballs of the patient.

1       4. (currently amended) The apparatus of claim 2, wherein the predetermined  
2       resonance range is ~~20-175~~ 30-50 kHz.

1       5. (original) The apparatus of claim 1, wherein the acoustic eye patch sensor  
2       is a piezoelectric film.

1       6. (original) The apparatus of claim 3, wherein the analyzer determines  
2       coherence between eyeballs of the patient.

1       7. (currently amended) The apparatus of claim 1, wherein ~~said predetermined~~  
2       range ~~includes frequencies less than 20 kHz and said analyzer detects retinal~~  
3       artery pulsations, and wherein pressure is applied to the eye ~~via said acoustic~~  
4       ~~eye patch~~ until the retinal artery pulsations disappear, said applied pressure  
5       being a further measure of intra cranial pressure.

1       8. (currently amended) A method for determining intra cranial pressure,  
2       comprising the steps of:

3               conformably adapting an acoustic eye patch to an eyeball of a patient,  
4       said eye patch having sensors for measuring acoustic signals in the brain,  
5       without the sensors coming into contact with the skull;

6               applying acoustic signals to the brain across the skull of the patient,  
7       said signals sweeping a predetermined range, a resonant frequency of said  
8       eyeball of the patient being within said predetermined range, said  
9       predetermined range covering a corresponding range of resonant frequencies  
10      across a range of patients; and

VCU 02-14

10/565,852

02940323aa

Amendment dated 10/21/2011

Reply to office action mailed 06/21/2011

11                   determining an intra cranial pressure from a degree of damping of ~~an~~  
12                   said swept acoustic signal at ~~at~~the resonant frequency of said eyeball of the  
13                   patient, said intra cranial pressure being transmitted directly to said eyeball  
14                   where said pressure and said damping are measured without interference from  
15                   attenuation by the skull of the patient, said resonant frequency and degree of  
16                   damping being determined from an output of the acoustic eye patch, wherein  
17                   said degree of damping is correlated to a measure of said intra cranial  
18                   pressure.

1                   9. (previously presented) The method of claim 8, wherein said predetermined  
2                   range is an ultrasonic resonance range.

1                   10. (original) The method of claim 8, wherein the acoustic eye patch is  
2                   applied to both eyeballs of the patient.

1                   11. (currently amended) The method of claim 9, wherein the predetermined  
2                   resonance range is ~~20-175-30-50~~ kHz.

1                   12. (original) The method of claim 8, wherein the acoustic eye patch sensor  
2                   is a piezoelectric film.

1                   13. (original) The method of claim 10, wherein the analyzer determines  
2                   coherence between eyeballs of the patient.

1                   14. (currently amended) The method of claim 8, wherein ~~said predetermined~~  
2                   range ~~includes frequencies less than 20 kHz and~~ said analyzer detects retinal  
3                   artery pulsations, and wherein pressure is applied to the eye via said acoustic

VCU 02-14

Amendment dated 10/21/2011

10/565,852

02940323aa

Reply to office action mailed 06/21/2011

4        cyc patch until the retinal artery pulsations disappear, said applied pressure

5        being a further measure of intra cranial pressure.